**BEFORE THE**

# Federal Communications Commission

**WASHINGTON, D.C. 20554**



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| In the Matter of | ) | |
| | ) | |
| The Establishment of Policies and Service Rules | ) | IB Docket No. 99-81 |
| for the Mobile Satellite Service in the 2 GHz Band | ) | RM-9328 |

To: The Commission

## SUPPLEMENTAL COMMENTS OF THE ICO USA SERVICE GROUP

BT North America, Inc. and TRW Inc., on behalf of the ICO USA Service Group ("IUSG")[1] -- by their attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415, 1.419, and the recent Public Notice of the International Bureau ("Bureau") seeking further comment on selected issues in the above-captioned proceeding[2] -- hereby offer the views of the IUSG on the matters raised in the Public Notice.

In the Public Notice, the International Bureau requested comment on an alternative method (the "Hybrid Plan") for licensing 2 GHz MSS systems that combines certain elements of other 2 GHz MSS licensing methods that the Commission has previously proposed. The IUSG continues to believe that the IUSG Negotiated Entry Approach ("INEA") that it described in its

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[1] The IUSG is comprised of established communications-oriented companies that are investors in ICO Services Limited ("ICO"), and which may also be providers of ICO mobile satellite services ("MSS") in the United States.

[2] "International Bureau Requests Further Comment on Selected Issues Regarding Authorization of 2 GHz Systems," IB Docket No. 99-81, RM-9328 (DA 00-222) (Int'l Bur., released February 7, 2000) ("Public Notice").

Comments and Reply Comments in this proceeding[3] offers the best solution to the challenges inherent in licensing MSS satellite systems in the 2 GHz bands. More specifically, the INEA will afford the most efficient use of valuable 2 GHz MSS spectrum while requiring the minimum expenditure of Commission resources for purposes of monitoring licensee operations or intervening in licensee disputes. Moreover, the INEA remains the only 2 GHz licensing plan that incorporates a system for transitioning incumbent licensees out of the bands allotted to 2 GHz MSS systems and equitably apportioning any costs associated with such relocation among the 2 GHz MSS licensees.

While the Hybrid Plan does not offer all the benefits afforded by the INEA, the IUSG finds that the Bureau's proposal incorporates several INEA principles – thus affording licensees greater flexibility to clear and use 2 GHz MSS spectrum of their choice than would be available under several of the Commission's other proposed licensing alternatives. If the Hybrid Plan is adopted, however, the IUSG urges the Commission not to restrict unduly the total amount of 2 GHz MSS spectrum that qualified system licensees can employ under that plan so as not to increase unnecessarily the cost of providing 2 GHz MSS service. The IUSG also requests that the Commission not require the pairing of uplink and downlink spectrum in the 2 GHz MSS bands by means of a standard offset, as such pairing is technically unnecessary and would also raise the cost of providing 2 GHz MSS. By maximizing the spectrum available to qualified 2 GHz MSS systems and eschewing spectrum pairing by means of a standard offset, the Commission can best

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[3] See Comments of the ICO USA Service Group (filed June 24, 1999) ("IUSG Comments"); Reply Comments of the ICO USA Service Group (filed July 26, 1999) ("IUSG Reply Comments").

safeguard the future of a viable 2 GHz MSS and the availability of affordable 2 GHz MSS service to currently underserved communities.

## I. The Commission Should Maximize the Amount of 2 GHz MSS Spectrum Available for Use by Qualified MSS Licensees At All Times.

As the IUSG understands the Bureau's Hybrid Plan, each 2 GHz MSS licensee that successfully places its first satellite into its intended orbit would be considered a qualified licensee that would be permitted to select a designated amount of spectrum from the 2 GHz MSS spectrum that is available at that time. The spectrum that the qualified licensee chooses would be known as its "home" spectrum, and the licensee would retain priority to make use of that spectrum over all other 2 GHz MSS licensees.[4] A qualified licensee would also be permitted to provide service in any other portion of the 2 GHz MSS spectrum (subject to inter-system coordination) on a conditional basis, provided that it did not interfere with the rights of other qualified MSS licensees to use their own "home" spectrum[5] -- but would not be allowed to use a total amount of spectrum greater than the amount of "home" spectrum that it is assigned.[6]

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[4] See Public Notice at 2 (¶¶ 2, 3).

[5] The IUSG understands that the operations of qualified 2 GHz MSS licensees in the 2 GHz MSS bands – whether within designated "home" spectrum or beyond such spectrum – would not be secondary to other services.

[6] See id. (¶ 3). The IUSG notes that, in order to be able to select "home" spectrum wherever it may be available in the 2 GHz MSS bands and to vacate bands that later 2 GHz MSS entrants may claim as their "home" spectrum, each 2 GHz MSS licensee will need to design its system to feature frequency agility. The IUSG previously urged the Commission to require that all 2 GHz MSS systems possess this capability. See IUSG Comments at 7-8; IUSG Reply Comments at 40-41.

The IUSG believes that this approach will give MSS licensees substantial flexibility to make use of the bands in which they can optimally operate, and will limit the cost and impact of transitioning incumbent licensees out of the 2 GHz MSS bands by enabling the first MSS licensee(s) to select bands in which incumbent operations are at a minimum. The IUSG particularly commends the Bureau on its choice of a clearly demonstrable milestone for granting a licensee the right to choose its "home" spectrum; the establishment of a satellite in its intended orbit is an objectively verifiable step that is not subject to the kind of disputes that have previously arisen with regard to satellite system compliance with the Commission's developmental milestones.

Given, however, that the Bureau appears to contemplate the division of the available 2 GHz MSS spectrum equally among all 2 GHz MSS licensees, the IUSG is concerned that the amount of "home" spectrum available to each licensee under the Hybrid Plan (and, consequently, the total amount of 2 GHz MSS spectrum that any licensee would be permitted to use under that plan) will be too small to permit economically viable MSS operations.[7] The IUSG is also concerned that valuable 2 GHz MSS spectrum that would otherwise be available for use as "home" spectrum for qualified 2 GHz MSS systems will lie fallow for years if the Commission does not ensure that licensees are making swift and timely progress towards the establishment of their respective satellite systems.

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[7] If all nine current 2 GHz MSS applicants are granted licenses, each licensee that proves able to place its first satellite into the satellite's intended orbit will be entitled to approximately 3.6 MHz of 2 GHz MSS spectrum.

As a partial solution to these difficulties, the IUSG urges the Commission to permit a 2 GHz MSS licensee that succeeds in placing its first satellite into the satellite's intended orbit to make use of more spectrum than that assigned to the licensee as "home" spectrum -- provided that such use remains secondary to the operations of other 2 GHz MSS operators that may qualify to claim part of that spectrum as their "home" spectrum. By this means, the Commission will ensure that no legitimate use of 2 GHz MSS spectrum is delayed during the period in which other system licensees are striving to place their satellite systems into operation.

In addition, the IUSG strongly recommends that the Commission apply the developmental milestones that it employed in its rules for Big LEO satellite systems to 2 GHz MSS systems so as further to ensure that spectrum that has been designated for 2 GHz MSS use does not lie fallow for any inordinate period of time. The Commission should make full use of the services of its new Enforcement Bureau in order to monitor compliance with those milestones, and should require the Enforcement Bureau to take the initiative in promptly revoking a system license where a system operator fails to meet a developmental milestone -- whether or not other interested parties file complaints regarding such a failure. Such proactive efforts by the Enforcement Bureau will reduce to a minimum the squabbling among system licensees over compliance with milestones that can otherwise consume the time and resources of the Commission and the licensees themselves.

The IUSG notes that the United States is required to inform the International Telecommunication Union ("ITU") of any necessary extension of time for U.S. 2 GHz MSS system operators to establish their satellite systems by the end of the six year period of validity of those systems' original notification. For ITU notifications made in 1997, extension requests must be made in 2003. The IUSG believes that it would be appropriate for the Commission to require

2 GHz MSS licensees to make an additional showing of the status of their respective systems in advance of this deadline as a further safeguard to ensure rapid 2 GHz MSS system development.

In the event that any 2 GHz MSS licensee fails to meet any one of the developmental milestones implemented for 2 GHz MSS systems, the Commission should revoke its system license without delay. The "home" spectrum of such a party should immediately be added to the pool of 2 GHz MSS spectrum that is available for assignment as "home" spectrum to qualified system licensees, and the total amount of "home" spectrum that each licensee may be assigned should be increased proportionally. By implementing these recommendations, the Commission can guarantee that the Hybrid Plan's system for assigning "home" spectrum to qualified 2 GHz MSS licensees remains appropriate to the needs of the existing group of 2 GHz MSS systems.

## II. The Commission Should Not Pair Portions of the Upper and Lower 2 GHz MSS Bands By Means of a Standard Offset in Assigning "Home" Spectrum.

Although the Bureau did not say so explicitly in the Public Notice, the IUSG is concerned that the Bureau may contemplate the pairing of 2 GHz MSS spectrum in the 1990-2025 (uplink) and 2165-2200 (downlink) MHz bands using a standard offset for purposes of assigning "home" spectrum to MSS system licensees. The IUSG would strongly oppose such a plan, both because the plan would lack any technical justification and because it would needlessly raise the cost of any necessary relocation of 2 GHz incumbent licensees.

As the Commission is aware, the pairing of satellite uplink and downlink bands based on a fixed offset is commonly employed for traditional, bent-pipe satellite communications in which the same information is transmitted from Earth to a satellite, translated on board the satellite to different frequencies, and retransmitted back to Earth on those different frequencies. In MSS operations that involve feeder links, however -- such as the operations of ICO's satellite system --

the signals are sent from a user terminal to a satellite and from there through a feeder link to a gateway station and the terrestrial network. Entirely different signals may travel from the terrestrial network to the gateway station and from there via a different feeder link to the spacecraft and back down again to the user terminal to complete the communication. There is no necessary connection between the system's uplink and downlink, and the different frequencies employed for uplink and downlink purposes are selected by ground stations rather than governed by the satellites involved. Consequently, there is simply no need to pair the operations of an MSS system employing feederlinks in a particular portion of 2 GHz MSS uplink spectrum with a similarly positioned portion of 2 GHz MSS downlink spectrum. The Commission would do better to allow market forces to dictate which spectrum best serves the needs of each 2 GHz MSS licensee.

Furthermore, the pairing of 2 GHz MSS uplink and downlink spectrum by means of a standard offset would significantly raise the cost of any necessary relocation of 2 GHz incumbent licensees. Many, if not most, 2 GHz MSS applicants will be unable to afford to pay for any necessary relocation of 2 GHz incumbent licensees for purposes of making 2 GHz MSS spectrum available for MSS use until they are much closer to the launch of their respective satellites. Therefore, should any costs or effort associated with transitioning incumbent licensees out of the 2 GHz MSS bands fall to 2 GHz MSS systems, they are likely at the outset to fall to the first 2 GHz MSS entrant alone. In fact, because Broadcast Auxiliary Service ("BAS") transmitters are designed to operate across the entire channel to which they are assigned, the first 2 GHz MSS entrant's efforts to make available even three or four megahertz of spectrum for its own use in the 2 GHz MSS uplink bands will require that all BAS licensee operations cease nationwide within

the channel.[8] That channel, however, may not be separated by a standard offset from the 2 GHz MSS downlink bands bearing the least possible amount of incumbent Fixed Service traffic. By requiring the use of a standard offset between the 2 GHz MSS uplink and downlink, the Commission would prevent the first 2 GHz entrant from selecting the optimal spectrum in which to operate in both the 2 GHz MSS uplink and downlink bands, thus significantly raising the cost of any incumbent licensee relocation effort to the initial licensee and ensuring that the same cost will be passed on to all subsequent 2 GHz MSS licensees as well.

In this same regard, the IUSG notes that spectrum allotted internationally for service exclusively to Region II falls at the top of the 2 GHz MSS uplink band, but at the bottom of the 2 GHz MSS downlink band. To pair spectrum that falls in the same place in both the 2 GHz MSS uplink and downlink bands by means of a standard offset would wastefully require geostationary orbit ("GSO") systems to forego the use of at least half of the 2 GHz MSS spectrum that is best suited for GSO use.[9] Furthermore, because NGSO systems are less likely to be able to make profitable use of Region II spectrum, the use of a standard offset would raise the risk that a portion of that spectrum will go entirely unused by MSS systems in the 2 GHz bands.

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[8] The IUSG notes that 17 or 18 MHz of 2 GHz MSS spectrum would be sufficient to provide up to five MSS system licensees with the 2 GHz "home" spectrum to which they would be entitled under the Hybrid Plan if they each successfully placed a satellite in its intended orbit. In the event that such spectrum should prove to be sufficient for the needs of all first-round 2 GHz MSS systems that ultimately achieve operational status, the Commission can and should rightly place the financial responsibility for clearing any further 2 GHz spectrum on licensees in future processing rounds.

[9] The Commission should confine GSO systems to the bands allocated internationally for service exclusively to Region II if it determines that such systems can share spectrum with incumbent services.

## III. If Properly Established, the Hybrid Plan Would Serve to Ensure the Availability of Affordable MSS Service to Currently Underserved Communities.

As the IUSG stated in its Comments in this proceeding, satellites are an excellent technology for delivering services to unserved, rural, insular or economically isolated areas of the United States.[10] The IUSG once again affirms it hope and intention to provide MSS to such communities.[11]

In order to provide MSS service to the currently underserved communities at afforable rates, however, 2 GHz MSS system operators must have access to sufficient MSS spectrum in which to conduct their operations. For this reason and the reasons set forth above, it is essential that the Commission ensure that each 2 GHz MSS system licensee that successfully places a satellite in its intended orbit be granted access to more spectrum than the total amount of the licensee's "home" spectrum assignment. For the same reasons, the Commission should ensure that the "home" spectrum of all qualified 2 GHz MSS systems is expanded appropriately whenever a 2 GHz MSS system loses its license for failure to satisfy the Commission's developmental milestones (or, for that matter, for any other reason).

MSS service providers will also be better able to offer service to underserved communities at affordable rates if the Commission does not pair 2 GHz MSS uplink and downlink spectrum assignments by means of a standard offset. The increase in the cost of any necessary relocation of 2 GHz incumbent licensees that would result from such spectrum pairing would clearly raise the cost of establishing viable 2 GHz MSS systems, and would necessarily be passed on to consumers

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[10] See IUSG Comments at 44.

[11] See id.

in the form of higher prices. The Commission can best ensure the availability of affordable service to currently underserved communities -- and the viability of 2 GHz MSS in the long term -- by structuring its 2 GHz MSS service rules to make the maximum possible spectrum available to qualified 2 GHz MSS systems and by allowing system operators the maximum possible flexibility to design their systems and structure their businesses for peak efficiency.

## IV. Conclusion

The IUSG continues to believe that the INEA will permit the most efficient use of valuable 2 GHz MSS spectrum while minimizing any necessary relocation of 2 GHz incumbent licensee operations and requiring the smallest possible expenditure of Commission resources for purposes of monitoring licensee operations or intervening in licensee disputes. Should the Commission elect to employ the Hybrid Plan as its means of licensing 2 GHz MSS systems, however, the IUSG urges the Commission to adopt the modifications to that plan proposed herein.

Respectfully submitted,

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